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- (1) Carry 32 passengers or 28 combat-equipped troops.
- (2) Carry 3,000 lbs. of cargo 870 NM with reserve.
- (3) Maximum range 1,170 NM.
- (4) Carry 3 tons short haul. Carry 7,500 pounds short haul (aircraft No. 11 and subsequent).
- (5) Aerial deliver heavy equipment and eight troops from rear exit (ramp).
- (6) Aerial deliver one (1) stick of 24 troops from either side door, or 35 troops alternately through each side door (one side door each side of aircraft). Simultaneous delivery of two (2) sticks of troops is not feasible by use of any combination of doors due lack of separation. Simultaneous use of ramp and side door exit is not feasible.
- (7) Aerial deliver one (1) stick of 12 troops in 22 seconds (side door) or one (1) stick of 24 troops in 35 seconds using alternately both side doors.
- (8) Adaptable to "pendulum" aerial delivery system. Army used side buffer boards. Rear exit (tail) is 73.5 inches (minimum) by 74 inches.
- (9) Suitable for DFR and night operations.

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(10) Rapid "turn-around time" due to truck bed height floor and rear loading ramp.

d. Limitations or Other Shortcomings:

(1) Cannot drop more than one (1) stick of troops at a time.

(2) Cannot load tail gate (ramp) when extended, but tail gate can be used for cargo tie down by closing first then shifting load to tail gate.

(3) Not truly "world mobile" as is except with augmented fuel. Maximum range is presently 1,170 NM. No record of flights with drop or fuselage type fuel tanks; however, fuselage tank installation would be a simple modification and is not considered a shortcoming except for the delay in minor engineering and installation.

(4) No information available on characteristics of aircraft during crash or ditching. High wing and high engine nacelles are a disadvantage with respect to personnel survival in each case.

(5) User tests did not include aircraft performance. Unable to verify Dehavilland claims.

(6) The Army recommends a minimum crew of three. Dehavilland says one pilot can operate the aircraft.

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c. Other Comments:

(1) Army personnel at Headquarters, U. S. Army, state they are very satisfied with the aircraft. Although some shortcomings appeared, as is always the case with a new aircraft, the Carabou seemed to have fewer. It was not stated what these "shortcomings" were; however, those discrepancies listed in the original Army "User" test report were corrected, retested, and fixes were found suitable. No attempt was made to resolve the single stick troop delivery limitation, probably due to past experience with C-123, C-119, and C-130 similar problems which resulted in many studies, tests, and Tube Goldberg resolutions that did not increase capabilities from two to three sticks as desired.

(2) FAA classed the Carabou as a short field aircraft (SFA) rather than a true STOL type in its technical report Project Hummingbird, dated April 1961. Bellavilland performance material quoted by the report agrees with other material thus far available and lists the following performance (standard day):

- (a) Field Length: 1,020 feet
- (b) Landing Speed: 65 m.p.h.
(56 knots)
- (c) Service Ceiling: *27,500 ft.

* At 26,000 lbs. Gross (At 23,500 lbs., would be 725 feet take-off roll; service ceiling, 26,000 feet.)

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(d) Take-off Run: (At maximum gross weight, zero wind) *530 feet

(e) Landing Run: (At maximum gross weight, zero wind) 535 feet
(Comment: Maximum gross at valid time of data was 26,000 pounds.)

(3) Bellavilland is to test a model with propeller reversing and a turboprop model of the Carabou for the Army in the near future. Army has no follow-on procurement plans to date for such configurations, and we would probably not be interested in turboprop equipment for [REDACTED]

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(4) Engines are Pratt & Whitney R-2000-4, same as C-54 aircraft.

(5) Cost of the aircraft is approximately \$750,000 each with spares.

3. Conclusions: The Carabou, from a preliminary operational evaluation, appears to be suitable as a supplement to present single engine Helio aircraft. It will not operate into all Helio STOL airstrips in [REDACTED] but would operate into many of these. The aircraft will do the job of a C-47 better and can land many places that a C-47 or C-46 should not utilize. Aerial delivery capabilities are better than a C-47, troop and cargo-wise, better than a C-46 cargo-wise, but about equal to the C-46 for a paratroop operation where simultaneous supply drop is not a requirement. It will do the job of six or more Helio L-28s in less total time, with twin-engine reliability. It will carry about one-third the payload of a C-123 aircraft, but will land where a C-123 could not land because of field length.

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4. Recommendations: The Caribon aircraft characteristics are favorable enough to warrant a further physical evaluation of operational considerations. It is, therefore, recommended that one or more persons of this Branch visit an Army installation for familiarization and demonstration to evaluate the aircraft in light of field operational considerations. [REDACTED] has been selected to represent this Branch.

5. This memorandum is submitted as a preliminary operational evaluation only. Additional comments will be submitted as more information is accumulated.

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ST/ASST

[REDACTED]

Chief, Air Support Branch, DDP-10/P

Recommendation contained in Paragraph 4 is approved.

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[REDACTED]

Acting Chief, DDP-10/P

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DDP/ASB/[REDACTED] (4543)
13 August 1951

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REMARKS

I concur with your recommendations for investigating the capabilities of the Carabou; however, I would also like to include a visit to a C-123 base. In each of these cases a representative from Materiel should accompany the team. I feel that maintenance and supply problems are equally as important as the operational aspects.

Since this is an extremely urgent matter, request that you proceed along these lines as expeditiously as possible.

SWB

FROM	
NAME AND ADDRESS	PHONE NO.
AC/DPD	
	DATE
	24 Aug 61